USAWC STRATEGY RESEARCH PROJECT

What are Battle Labs – Do We Still Need Them?

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ABSTRACT

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The nation's leaders, from the President, to the Secretary of Defense, to the Chief of Staff of the Army, have all developed clear visions for the future that have as their centerpiece the transformation of the forces. The Executive Agent within the Army for transformation is the Training and Doctrine Command (TRADOC). TRADOC has devoted the majority of its doctrine resources to the transformation effort. Somewhat unknown to most in the Army, but a key participant working transformation issues, are the various Battle Labs to include the new Maneuver Unit of Action Battle Lab. This research paper looks at the creation of the battle labs, whether they've been successful, the role they perform in Army Transformation, and the future of battle labs.

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WHAT ARE BATTLE LABS – DO WE STILL NEED THEM?

> A military structured to deter massive Cold War-era armies must be transformed to focus more on how an adversary might fight rather than where and when a war might occur….Innovation within the armed forces will rest on experimentation with new approaches to warfare, strengthening joint operations, exploiting U.S. intelligence advantages, and taking full advantage of science and technology.
>
> National Security Strategy , September 2002

INTRODUCTION

President Bush in the most recent National Security Strategy (NSS) continues to push for a transformed military. The NSS specifically calls for experimentation and making full use of science and technology to facilitate the transformation. The current Quadrennial Defense Review also calls for experimenting with the development of new military capabilities[1] as well as conducting research, development, test, and demonstration programs.[2] Leaders at the highest levels all agree that transformation needs to happen. How does the Army intend to make that desire a reality? The key strategic way that the Army is using to accomplish transformation is the establishment of Training and Doctrine Command (TRADOC) as responsible for the Doctrine, Organizational, Training, Material, Leadership, Personnel and Facilities (DOTMLPF) development of transformation. This follows from its longstanding role as the Army's primary combat developer and architect for the future.[3] Even with their extremely limited resources, both in manpower and budget authority, TRADOC has put considerable effort into developing Army Transformation. Almost every combat development effort and product produced by TRADOC over the last two years has been in support of Transformation. Much of that work has been accomplished by TRADOC's Battle Labs. Many readers will be unfamiliar with the Battle Labs, indeed most who are not directly involved in combat development probably know very little about the battle labs. Strategic leaders of the Army should understand all of the resources available, and the Battle Labs are a key strategic resource in combat development and most especially in transformation. This paper will look at why we needed Battle Labs, describe what Battle Labs do for the Army, look at their future evolution as they continue to support the development of Army Transformation, and in the end convince the reader that the Army's Battle Labs are key and essential to the success of Army Transformation.

HISTORICAL BACKGROUND

> We must have an institutionalized means to experiment with new warfighting ideas, techniques and technologies to quickly adjust and enhance battlefield capabilities for war and operations other than war. We needed a means to maintain the edge unique to the set of strategic, policy, threat, and resource circumstances we are in. Thus, the invention of Battle Labs.
>
> —GEN Frederick M. Franks, Jr

Coming off the euphoria of winning so quickly in Desert Storm, the Army leadership was aware that not everything had worked as well as they would have liked. An illustrative example was that of the over 40,000 containers sent to the theater, over 25,000 had to be opened to determine the contents[4]. There was also a feeling that with the end of the Cold War and in light of the many recent combat operations and operations other than war such as Urgent Fury, Just Cause, Desert Shield/Storm, Restore Hope, and Provide Comfort just to name a few, we were entering a operational environment with an ambiguous threat that was hard to predict and where high-payoff technologies were widely available.[5] The US Army needed a mechanism to quickly address change, and to develop concepts and requirements to address the new environment. As GEN Franks indicates above, the answer was the invention of the Battle Labs.

WHY WE NEEDED BATTLE LABS

> We established Battle Labs in 1992 to experiment with changing methods of warfare, beginning where we saw battle changing. Our aim then and now is to ensure future generations of soldiers and leaders have the same battlefield edge we had on Desert Storm and other recent operations. What we have done in the Army and TRADOC is adopt a revolutionary method to change – forming hypotheses of changing methods of operation, then conducting experiments using soldiers and leaders in increasingly realistic live, tactically competitive training environments. From these experiments, we develop warfighting requirements for the Force Projection Army to maintain our edge in war and operations other than war[6].
>
> —Battle Labs Maintaining the Edge

World War II saw the beginning of U.S. dominance in technology. With the security of two oceans and the commitment of both the government and people, industry had the freedom of action to develop, build and field a tremendous arsenal. Certainly since then, technology dominance has been a key part of our national military strategy (NMS)[7]. TRADOC is the Army's primary combat developer and as such is responsible for developing the concepts, and

requirements for the future[8]. Following Desert Storm, TRADOC commander GEN Frederick Franks decided that there needed to be a more focused, warfighter-oriented effort to achieve technology dominance. Battle Labs were created to facilitate looking at changes in strategy, policy, resource, doctrine, and methods of warfare inside a sheltered institution. More importantly, the concept was to take tactically savvy soldiers and leaders from both the operational army and the acquisition corps and give them the tools and resources to quickly turn experiments and analysis into warfighting requirements.

WHAT ARE THE BATTLE LABS

> Revolutions in military affairs are periods of innovations in which armed forces develop novel concepts involving changes in doctrine, tactics, procedures, and technology. They involve extensive experimentations. Their development also demands a culture that allows innovation and debate unfettered by dogma[9].
>
> —Williamson Murray and MacGregor Knox

From the inception of the Battle Labs, TRADOC wanted them to have an integrating role that would horizontally integrate new capabilities across the force.[10] As the Table of Distribution and Allowances (TDA's) were developed, each Battle Lab was assigned officers from across the branches and specialties to include Operations Research and Systems Analysis, Army Acquisition Corps, and Space Operations.[11] The original Battle Labs were organized around the concept of Battlefield Dynamics as described in the June 1993 version of FM 100-5. The Battlefield Dynamics were defined as: early entry, battle space, depth & simultaneous attack, battle command, and combat service support.[12] Each battlefield dynamic affected all branches, so every TRADOC School and Center would have to work with all Battle Labs. TRADOC also coordinated for Army Materiel Command and FORSCOM participation. AMC provided liaisons to the Battle Labs and identified Research, Development, and Engineering Centers (RDECs) to work with the Battle Labs. FORSCOM units assigned on or near posts with the Battle Labs were identified to work with the Battle Labs, particularly on experiments to provide tactical/practical soldier input on concepts and requirements.

The original Battle Labs established in 1992 were[13]:

Battlefield Dynamic	Battle Lab	Location
• Early Entry	• Early Entry Lethality and Survivability	• Ft Monroe
• Battle Space	• Mounted Battle Space • Dismounted Battle Space	• Ft Knox
• Depth & Simultaneous Attack	• Depth & Simultaneous Attack	• Ft Sill
• Battle Command	• Battle Command	• Ft Huachuca • Ft Leavenworth • Ft Gordon
• Combat Service Support	• Combat Service Support	• Ft Lee

FIGURE 1. BATTLE LABS CIRCA 1992

Due to the tremendous success of these early Battle Labs, an Air Maneuver, Maneuver Support, and Air & Missile Defense (Provisional) Battle Lab were chartered. All of these battle labs are TRADOC organizations, supporting the TRADOC missions of concept development and requirements determination. The success of the TRADOC battle labs have not gone unnoticed outside of TRADOC. Both the Space and Missile Defense Command and the Special

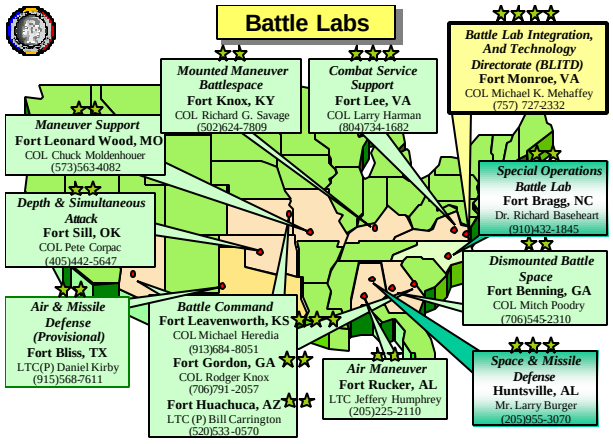

FIGURE 2: BATTLE LABS & LOCATIONS

Operations Command have established Battle Labs, which coordinate closely with the TRADOC Battle Labs and perform similar roles for their parent organizations.[14]

While emphasis on horizontal integration across the Battlefield Dynamics was important when the Battle Labs were created, it was also recognized that Joint Operations were critical to the U.S. successes in recent operations. From the beginning there was a desire to conduct joint

FIGURE 2: JOINT BATTLE LABS

experimentation, and a commitment to integrate experiment objectives and events consistent with Service objectives to explore joint concepts.[15] Army Battle Labs also have to integrate with the other services. Fighting joint is nothing new, the United States fought joint during World War II. There are some who would argue that as we fought joint operations in both the Atlantic and Pacific Theater, we were at the height of our joint capability. Regardless, the ongoing Global War on Terrorism as recently witnessed in Afghanistan has clearly demonstrated the challenge of fighting new enemies and demands an even higher degree of integration between the services.[16] As the chart above depicts, the other services have developed their own Battle Labs, and it is imperative that the Battle Labs all work together to solve the joint problems.

WHAT ARE THE BATTLE LAB MISSIONS

Battle Labs conduct warfighting experiments to develop ideas, insights and requirements using Science and Technology Objectives, Advanced Technology Demonstrations, Advanced

Concept Technology Demonstrations, Concept Experimentation Programs, Limited Objective Experiments, Army Warfighting Experiments, Advanced Concepts and Technology II, and Seminar War Games. All of these programs work together to yield insights in order to decide whether to invest in the concept, discard it, or experiment further. Battle Labs are also a key link to the Science and Technology community and leverage this country's tremendous advantage in science and technology by focusing research where the payoffs are highest to support future operational capabilities requirements.

The experimental process used by the Battle Labs is illustrated below. Battle Labs develop the future concepts and future operating capabilities required by the Objective Force. Using insights gained from operational experience, constructive and virtual simulations, and the programs described below, the Battle Labs identify initiatives, identify a way to test those initiative, such as conducting Limited Objective Experimentation, and develop a data collection plan. The Battle Labs then apply qualitative and quantitative analysis to the ideas, further refine the list of initiatives, and conduct Advance Warfighting Experiments, such as Millennium Challenge 02. Post experiment analysis and modeling help to determine if the initiatives should be discarded, investigated further, or if we should invest now to get that capability into the warfighter's hands. Battle Labs receive guidance from the Army Science and Technology Master Plan and from TRADOC PAM 525-5, "Force XXI Operations," originally published 1994 and currently undergoing revision, as well as TRADOC PAM 525-66, "Future Operational Capabilities."

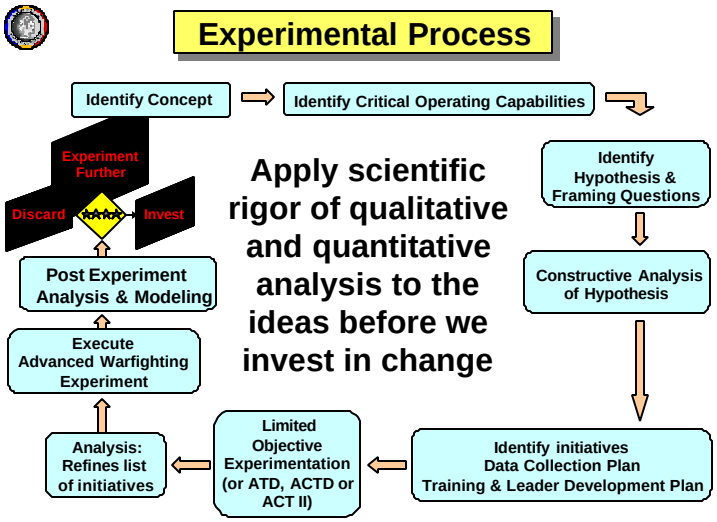

FIGURE 3 THE EXPERIMENTAL PROCESS

ARMY SCIENCE AND TECHNOLOGY MASTER PLAN

The Army Science and Technology Master Plan is the overarching science and technology document used by senior leaders, scientists and soldiers. This document provides the top-level guidance to the S&T community and describes the key investments funded in the Future Years Defense Program 9FYDP). Volume one of the ASTMP has chapters on the Army S&T strategy, TRADOC's role in S&T, Advanced Technology Development, Applied Research, Basic Research, and Technology Transfer. Volume two consists of seven annexes with one for each of the following: Science and Technology Objectives (STOs), Advanced Technology Demonstrations (ATDs), Advanced Concept Technology Demonstrations (ACTDs), Logistics, Global Science and Technology Watch, Infrastructure, and Manufacturing Technology.[17]

TRADOC PAMPHLET 525-66 FUTURE OPERATIONAL CAPABILITY

TRADOC PAM 525-66 provides the Future Operational Capabilities (FOCs) required to execute the Objective Force concepts. FOCs drive the requirements determination process, the conduct of studies and experimentation, and provide the focus for Army Science and Technology efforts.[18]

SCIENCE AND TECHNOLOGY OBJECTIVES

Science and Technology Objectives (STOs) help to focus the Army Science and Technology program in the areas of 6.2 and 6.3 funding. Limited to 200 per year, these are the highest priority efforts in the advanced technology development and applied research programs. They are competitive and are reviewed annually at a joint materiel developer and TRADOC meeting and are then reviewed and approved by the Army Science and Technology Work Group and become part of the Army Science and Technology Master Plan (ASTMP).[19]

ADVANCED TECHNOLOGY DEMONSTRATIONS

Advanced Technology Demonstrations (ATDs) are proof of principle demonstrations used in near-term system developments to reduce risk in accelerating the introduction of new technologies into operational systems. ATDs must be conducted at the system or major subsystem level in an operational environment and require active participation by the Battle Labs and the material developers (PMs)[20].

ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS

Advanced Concept Technology Demonstrations (ACTDs) support the Combatant Commanders by addressing capability shortfalls that they have identified. ACTDs require participation and support by a TRADOC proponent, materiel developers, combat developers, and Combatant Commanders. The purpose of the ACTD is to develop user understanding of the military utility of a new technology while gaining user input before committing to large-scale acquisition, to develop concepts to use this new technology, and to provide limited, initial residual operational capabilities to the Combatant Commander. Recent ACTD's include UAV development for Predator and Global Hawk, unattended ground sensors[21], micro air vehicles, and thermobaric munitions[22].

CONCEPT EXPERIMENTATION PROGRAMS

Concept Experimentation Programs are a TRADOC funded, Battle Lab executed program to explore new concepts.[23] For the last two years, TRADOC has limited funding of CEPs to those concepts that directly support Army Transformation. For example, in FY2002, all CEPs were conducted to support the Unit of Action concept. Five CEPs were approved, each looking at a different aspect of the Unit of Action and each supported by multiple Battle Labs. The five CEPS were Unit of Action, Shaping the Battlespace, Commander's Information Fusion Cell, Objective Force Sustainment, and Unit of Action Intelligence, Surveillance, and Reconnaissance.[24] These programs typically use rock drills, simulations and war games to develop and test new concepts.

LIMITED OBJECTIVE EXPERIMENTS

Limited Objective Experiments (LOEs) provide for a quick analysis of an issue. LOEs are funded by school discretionary funds (which are very limited) or by funding from another government agency so they tend to be low cost. LOEs follow the same requirements for experimentation planning and reporting as CEPs. As an example of a LOE, the Air and Missile Defense Battle Lab recently conducted a LOE dubbed "PATRIOT Lite." This LOE looked at industry efforts to downsize the Fire Control van and Antenna Mast Group that are currently on 5 ton vehicles to much more deployable HMMWVs.

ADVANCED WARFIGHTING EXPERIMENTS

Advanced Warfighting Experiments (AWEs) are designed to be combined arms and sometimes joint exercises that may be live, constructive, simulation, or a combination. They are culminating efforts across all aspects of Doctrine, Organization, Training, Materiel, Leadership, Personnel, and Facilities (DOTML-PF) in a tactically competitive environment focused on major increases to warfighting capabilities. An AWE should lead to the decision to invest, divest, or experiment further. Millennium Challenge 02, in which experiments with the Stryker Brigade Combat Team were well publicized, was an Advance Warfighting Experiment that was joint in nature and looked at many aspects of all four services Objective Force Concepts.

ADVANCED CONCEPTS AND TECHNOLOGY II

Advanced Concepts and Technology II (ACT II) is a Department of the Army program that funds up to $1.5 million for up to 12 months to apply mature technologies and unconventional concepts to address specific Objective Force Capabilities (OFCs) and Future Operational Capabilities (FOCs). The intent is to quickly move science and technology from the research arena to the operational arena shortening the acquisition cycle and reducing developmental costs[25]. ACT II successes include the Precision Guided Airdrop, the 2.75" Precision Kill munitions, and the MCS Phoenix.[26]

SEMINAR WAR GAMES

TRADOC conducts Seminar War Games several times a year to pull together all of the proponent commandants, Directors of Combat Development, Battle Labs, and TRADOC staff. These are the key strategic leaders developing the concepts and requirements for Army Transformation. The purpose of the event is to make sure that everyone understands the current concepts and requirements and to war game how well these concepts will work in the projected threat environment of the future. TRADOC's Final Draft of their Transformation O&O plan calls this an "institutionalized *Devil's Advocate"* program. The TRADOC commander and key staff are able to glean insights and provide guidance to keep transformation efforts on track and on a high priority.[27] Each SWG looks at specific focus Points. For example, one of the SWGs in 2002 looked at roles of the Unit of Action in Decisive Tactical Combat.

WHAT HAVE BATTLE LABS CONTRIBUTED?

> The soldiers and civilians of Battle Labs are "pathfinders" for the army of the 21st Century.
>
> General Frederick M. Franks Jr.

Battle Labs have become key to the success of each of the Branches. For each branch the Battle Lab guides the development of the Science and Technology so that it matures in a timely fashion to support the Future Operational Capabilities identified by the Battle Lab. In many cases, Battle Labs have been able to identify a shortfall in operational capability, develop a possible solution, test it, and quickly implement the solution. Examples would include the tremendous progress made to digitize the force, increasing total asset visibility with Automatic Identification Technology, shortening sensor to shooter time lines working to perfect Joint Precision Strikes, a Linebacker version of the Bradley that incorporated a Stinger pod in place of the TOW pod, and more recently the development of the concepts and requirements for the Future Combat System. In 1996, shortly after the battle labs were created, the Warfighting Rapid Acquisition Program (WRAP) was set up to take successful battle lab experiments that address urgent needs from the laboratories and quickly field them to warfighters.[28] The program, now known as the Rapid Acquisition Program for Transformation (RAPT), has been very successful and includes the Army Airborne Command and Control System (A2C2S), Force XXI Battle Command Battalion/Brigade and Below (FBCB2), Tactical Internet, Stryker, RF Data Tags, and Avenger.[29] With successes like these, there is no wonder that the Branches value the work done by the Battle Labs and are reluctant to downsize much less to outright lose their Battle Labs. However, the Battle Labs, and DCDs have downsized over the last several years, and at least some of the Battle Labs are in danger of losing even more if not all resources.

WHAT IS THE FUTURE FOR BATTLE LABS

> Innovation within the armed forces will rest on experimentation with new approaches to warfare, strengthening joint operations, exploiting U.S. intelligence advantages and taking full advantage of science and technology. We must also transform the way the Department of Defense is run, especially in financial management and recruitment and retention. Finally, while maintaining near-term readiness and the ability to fight the war on terrorism, the goal must be to provide the President with a wider range of military options to discourage aggression or any form of coercion against the United States, our allies, and our friends[30].
>
> George W. Bush, The National Security Strategy

Reading the National Security Strategy, it is clear that the Battle Labs, whose focus is on innovation and experimentation, should be assured of a safe, even robust, future. Key to understanding the future for Battle Labs is an understanding of how the Army is going about its current transformation efforts. GEN Shinseki early in his time as the Chief of Staff of the Army noted that the light forces are too light and the heavy forces too heavy. He then set the US Army on the path towards transformation with a three pronged effort: modernize the Legacy force, quickly develop an Interim Force as a stop gap and to experiment with, and develop an Objective Force.[31]

GEN Shinseki was not the first to make this assessment, as GEN Meyer, the CSA in 1980-81 made the same assessment and created a prototype light division called the High-Technology Light Division (HTLD).[32] GEN Meyer also wanted this "interim" capability more quickly than the normal force development cycle. His approach was to bypass the system that he saw as too slow and he gave the mission directly to the commander of the 9th Infantry Division. The idea was to bypass the branch parochialism as each protected its perceived area of expertise and proceeded at its own pace. While Combined Arms Center (CAC) at Ft Leavenworth was tasked by TRADOC to be the integrating HQs across the branches at Division and higher levels of doctrine, they were inadequately resourced with staff and authority. The 9th ID Commander was given the mission to develop the prototype division, the concepts for using the division, and the resources to do so.[33] He was given a small think tank, direct access to the CSA, and was allowed to purchase off-the-shelf equipment to test. As might be expected, the branches resisted this approach at every opportunity. Despite developing innovative concepts and organizations, the actual fielding still had to go through the normal acquisition process and TRADOC, AMC and the Army Staff had not been a part of 9th ID's process and did not support their efforts. The end result is that a force that was designed to fight in the desert and take out tanks, but was mobile enough to be strategically mobile, was stood down in 1989, just a few short months before it would have shown it's worth as a significantly more capable force than the light infantry sent in to deter Iraq in the early stages of Desert Shield.[34]

GEN Shinseki's approach has been to work within the system while at the same time working to change the system to make it more responsive. The effects of this effort on Battle Labs have been significant. Despite the original intentions when the Battle Labs were set up, they have for the most part become subservient to the Branch Chiefs. In fact, one recent TRADOC Commander directed that the Branch Chiefs be the "Director" of the Battle Labs as

one of their many hats, the Colonel that was in charge is now the “Deputy Director” and his rating scheme is normally entirely within the Branch. The intent was to elevate the importance and support the Battle Labs were getting by having the Branch Chief directly involved. The unintended result was that the Battle Labs now spend the majority of their time working on developing the concepts and requirements for future weapon systems for their branch. Where mutually beneficial, the Battle Labs do work together on various technology efforts. In October 1999, this began to change. AS TRADOC came under increasing pressure from the Chief of Staff of the Army to produce products for the Interim Brigade Combat Team, the Interim Division, and the Objective Force, Battle Labs and DCDs were increasingly tasked to come to Ft Monroe and work together to quickly develop the concepts and requirements to support these three efforts. Money that used to fund individual Branch Concept Exploration Programs was now focused on specific topics, such as developing the concepts of the Unit of Action and efforts by all the Battle Labs had to go to specifically support that. Branch Chiefs, the Directors of Combat Development at each Branch and the “Deputy Directors” of the Battle Labs began meeting as often as monthly for three to ten days at a time to work concepts. Then in 2002, TRADOC stood up its first Enhanced Battle Lab, the Unit of Action Maneuver Battle Lab at Ft Knox. Every Branch was tasked to provide personnel to man this Battle Lab on a full time basis. The Unit of Action Maneuver Battle Lab (UAMBL) was tasked to develop the requirements and concepts for the Future Combat System (FCS). The FCS is a family of systems that cuts across every branch. With a significant boost in manpower and funds to what was essentially a beefed up Mounted Maneuver Battle Space Battle Lab, the UAMBL worked at a furious pace to develop the concepts and requirements for the FCS.

Based on the success of the UAMBL, TRADOC is contemplating standing up six total Enhanced Battle Labs that are Headquarters TRADOC activities employed in direct support of Specified Proponents.[35] Note that it is not an accident that they are a HQs TRADOC activity. TRADOC is evidently trying to break the current Branch/Battle Lab relationship in an effort to improve the overall integration potential of the Battle Labs. However, TRADOC may have significantly diluted that desired end state by going on to say that the Enhanced Battle Labs would be employed in Direct Support of the Specified Proponent. Specified Proponents are those TRADOC general officer commanders who will be chartered to develop the most critical aspects of Objective Force Development.

The Specified Proponents are designated as:

- Battle Command and C4ISR -- Commander, Combined Arms Command
- Maneuver Sustainment – Commander, Combined Arms Support Center
- Maneuver Support – Commander, Maneuver Support Center
- Fires – Commander, US Army Field Artillery Center
- Unit of Action and Future Combat System – Commander US Army Armor Center
- Close Fight and Special Purpose Forces – Commander, US Army Infantry Center

Each of these Specified Proponents will have an Enhanced Battle Lab manned by personnel from across the branches in direct support.[36] No mention is made of the future of the other Battle Labs, such as the Air Maneuver, and Air & Missile Defense Battle Labs.

KEY POINTS TO CONSIDER FOR THE FUTURE OF THE BATTLE LABS

TRADOC is the Army's *architect for the future* and is charged to chart the course for the Army.

Materiel System Research, Development, and Acquisition Management 2002 – Executive Primer

TRADOC executes its responsibilities as the architect for the future through its staff, through the Directorate of Combat Developments (DCDs) and through the Battle Labs at each of the branches. The DCDs are primarily working systems and requirements for the already approved weapon systems out through the POM years, so from zero to about 8 years out. The Battle Labs typically work on two prongs. The first is technology insertion, getting advanced technology out to the warfighter quickly, as we have seen in the efforts they do with ACTDs, ACT II, and RAPT for example. But they also have a responsibility to shape the Science and Technology looking beyond the POM years out twenty or even thirty years, as we've seen with STOs. Failure to fund and man either one of these organizations will put TRADOC's ability to be the architect for the future severely at risk.

One wonders if this is not already happening given that approval authority for requirements was pulled from TRADOC to the Chief of Staff of the Army (CSA).[37] When the CSA came to office, one of his first initiatives was to get the warfighting units up to full strength. By FY2002, the Divisions, Armored Cavalry Regiments, and selected Early Deploying Units were filled to 100% in the aggregate.[38] Initially, the primary bill payers for these fills were the

TDA units, and TRADOC is a big TDA unit. Since part of the initiative included filling recruiting, Drill Sergeants, and Instructors to 100% also, the rest of TRADOC took a big hit. DCDs and Battle Labs at first lost people, then lost force structure, then more people, to the extent that at some of them, they were at less than 40% of the strength they had in the mid 1980's. Due to this chronic under manning, many of the branches find themselves having difficulty keeping up with requirements generation, force modernization, doctrine development, and science & technology over watch. TRADOC's inability to keep up with its responsibilities appears to be making some on the Army staff think that TRADOC should focus on its missions to recruit, and train soldiers, while the Army staff would take over responsibilities to develop doctrine and requirements. Unless the Army staff grows tremendously, they will find that they will not be able to do any better than TRADOC and quite likely will not do as well as TRADOC has.

CAC must be sufficiently resourced to actually lead the branches, particularly those branches that would be assigned to it under Maneuver: Armor, Infantry, Aviation, Field Artillery, and Air Defense Artillery.

Enhanced Battle Labs working in support of Maneuver (Battle Command and C4ISR, Fires, Unit of Action and FCS, Close Fight and Special Purpose Forces) should have O6 or O7 Directors (not the current convention of the Branch Chief being double hatted as the "Director" and the O6 as the Deputy Director). They should be rated by the Specified Proponent (read Branch Chief) and senior rated by the CAC commander. They should have frequent access to the CAC commander. Deputy Directors should be from a different branch, rated by the Director and senior rated by the CAC commander.

Eventually, TRADOC must come to grips with the concept of the Branches versus Integrating Centers. This affects everything from the way we do force development to the way we train our soldiers and leaders. There is tremendous resistance to the idea of doing away with Branches, from Congress, from Industry, and from the Officer Corps that grew up with Branches. Our inability to move forward with a new structure will prevent us from truly achieving the Objective Force.

TRADOC appears to be moving forward with the creation of Enhanced Battle Labs, while retaining all of the current battle labs (some of which form the nucleus for the Enhanced Battle Labs). During the transition to a Branchless Army, there will continue to be a need for the current Battle Labs. Unless adequate resources are provided to TRADOC to fund and man the

Enhanced and current Battle Labs, TRADOC will not be able to meet the requirements across Legacy, Interim, and Objective Force. In fact, by the time all of the enhanced Battle Labs are stood up, unless there has been an increase in funding and manning, there will not be any funding or manning left for the other 5 battle labs. There might not even be enough to man all six enhanced battle Labs simultaneously with the resources now available. Some might argue to just flex when needed, and send people to the one that is hot on TDY status until the next product is produced. Besides the obvious wear and tear on the soldiers and their families, this argument overlooks the fact that these projects will require management over a period of several years, many if not all nearly simultaneously, in order to produce the Objective Force on the time line that the Chief of Staff of the Army has set forward. Short changing this effort will only result in a weaker product on a longer time scale.

The Enhanced Battle Labs have been given an enormous mission set to manage. Most if not all will determine the key concepts that must be developed and will prioritize their efforts. Given the resource constrained environment we are likely to be in there is no other choice. The proponent will quite naturally chose a Battle Lab Director that is from his branch. Concepts and requirements will again quite naturally be those most of concern to that branch. However, there needs to be a purposeful changing of the branch of the Director ever couple of years to make sure that all aspects are considered over time. Again the Deputy Director should be from a different branch to help bring balance to the process and to help keep the Enhanced Battle Labs broadly focused across the branches and not just the old branch battle labs but with more money and manpower.

Finally, what we will have for a warfighting capability 10 to 15 years from now depends to a large degree on how we invest in Science and Technology today. The Battle Labs continue to play a key and vital role in guiding the Army's S&T investments. The Battle Labs pay a tremendous return on the Army's investment of people and funding. Most especially in the critical early stages of the Army Transformation, we cannot afford to shortchange the funding or manpower for the Battle Labs. The Army institution needs to decide if the branches will remain preeminent, the "Crown Jewels" as a recent TRADOC commander once stated, or if we will consolidate into integrating branches such as a Maneuver branch. Battle Labs should be aligned to support whichever decision is made. To do otherwise will cause significant risk to whichever branches loose manpower and funding for their Battle Labs to stand up "integrating" Battle Labs that in reality are nothing more than another Armor Branch battle lab. The Battle

Labs are critical to executing TRADOC's responsibilities representing the warfighter and user in its role as the Army's architect of the future.

If in the future, as there have been some rumors, TRADOC no longer has responsibilities for requirements generation and the Army Staff takes on requirements and fulfills the role of the architect of the future, there will still be a need for Battle Labs. Who they report to will change, and that will affect priorities and direction of effort, but someone must still manage the direction of Science and Technology, conduct experiments, and integrate capabilities across the force. That someone should be the Army's Battle Labs.

RECOMMENDATIONS

Two very difficult decisions need to be made by the Department of the Army. One decision revolves around the question of a major reorganization of the Army and the other is a commitment to resourcing TRADOC.

Should the Objective Force have individual branches, or should we consolidate into Maneuver, Maneuver Support, and Maneuver Sustainment. This decision drives where and how many battle labs you need, whether you need to consolidate various branch schools and centers, which in turn drives which posts should be considered for closure in the next BRAC round. This is a highly charged, frequently emotional, controversial idea. Yet it is the central question regarding the future of the Objective Force. The branch structure that we have now has been very successful at focusing energy and developing concepts and requirements in each of the battlefield functional areas. However, it is simple human nature that each branch will always try to do what's best for the branch and not necessarily what's best for the Army overall. There has been a lot of discussion in recent years over how to defeat the ill effects of "stove piping" where each branch does its own concepts and requirements. We are at the point in the U.S. Army's development where it is time to move on to the next step. That next step is the consolidation of branches. Maneuver Support and Maneuver Sustainment have to some degree already begun the process. Maneuver should be the next integrating center. Having made this decision, the Army would then need to decide to what extent it needs to consolidate headquarters and staff, initial entry training, career progression training, requirements generation, doctrine and concepts generation, and oversight of it's science and technology responsibilities. These decisions need to be made sooner rather than later as they have a

significant impact on the next round of BRAC closures, on future military construction, and on privatization of family housing.

Since the end of the cold war, the Army has been forced to downsize. A reluctance to go to fewer than 10 active divisions, or fewer than 4 corps, has caused sever cuts in the size of TRADOC. Additional pressure was brought to bear with recent efforts to man the warfighters at 100% strength – at the cost of not filling TDA billets. Again TRADOC was a significant bill payer for this reduction. With these challenges, TRADOC has not always been able to keep up with all of the requirements, concepts and doctrine development that it should. However, the Army Staff should not be led to believe that they will be able to do any better. By all accounts, the Army staff is already working long hours with their current responsibilities. They should resource TRADOC and then trust them to do the mission they are assigned with proper oversight. Each service is allowed to go up to 2% over strength, roughly 9000 soldiers for the U.S. Army. For the last two years, recruiting has been good, retention has also been strong, maintaining the over strength is primarily a matter of funding it. In today's environment with the GWOT, and a pending war in IRAQ, funding should be available. A small portion of this over strength should be dedicated to TRADOC to properly man its Battle Labs and DCDs who are doing the critical work that will pay off in the form of the Objective Force.

Battle Labs should be consolidated only if the branches are consolidated. Regardless, they need to be adequately funded and manned to ensure a successful Army Transformation to the Objective Force on a time line that does not overly stress the Legacy and Interim Force.

WORK COUNT = 6009

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